Saeid Balaneshin-kordan

Wayne State University

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EDUCATION

PhD in ***Computer Science****,* Cum. GPA: 3.97 / 4.0 Aug. 2013–Feb. 2018
Wayne State University, Detroit, Michigan
Main Projects:

- Designed **Deep Neural Networks** for Textual and Multi-modal **Retrieval Systems**.
  - Implemented deep Siamese neural networks by using **Torch** and **Tensorflow** frameworks,
  - Utilized **Indri**, **Galago**, and **Apache Lucene** search engines,
  - Analyzed and visualized experimental results by using **Tensorboard**, **ggplot** and **Pandas**.
- Designed **Topic Modeling** and **Language Modeling** Techniques for Information Retrieval and Question Answering.
  - Implemented a **Recurrent Neural Network** architecture for language modeling,
  - Implemented **Topic-modeling** techniques such as **Latent Dirichlet Allocation (LDA)** and **Non-negative matrix factorization (NMF)** and embedding models such as **word2vec**.
- Designed **Optimization Techniques** for Document Retrieval from **Multi-modal and Clinical Big Data**.
  - Used **GPU** for training **Convolutional Neural Networks** on Amazon Elastic Compute Cloud (**EC2**),
  - Used **PySpark** and **Hadoop** for **distributed computing**
- Implemented **Deep Reinforcement Learning (RL)** Algorithms for Autonomous Driving.
  - Implemented **deep Q-networks** in the applications of autonomous driving for car racing game **TORCS**,
  - Designed a **multi-agent** deep reinforcement learning algorithm,
  - Implemented a **parallel and multithreaded RL algorithms** using **Tensorflow**.

MSc in ***Computer Science****,* Cum. GPA: 3.97 / 4.0 Aug. 2013–Feb. 2018
Wayne State University, Detroit, Michigan
Thesis: A Unified Approach to Utilize General-purpose and Domain-specific **Knowledge-bases** in **Clinical Decision Support** Systems

MSc in ***Telecommunication Engineering****,* Cum. GPA: 3.60 / 4.0 Sept. 2009–Nov. 2011
Iran University of Science and Technology, Tehran, Iran
Thesis: A Blind Spectrum Sensing Method for Cognitive Radio Systems

EXPERIENCE

Co-founder & Technical Director 2008–2010
Basamad Pardaz System Co (Startup Company), Urmia, Iran

- Atmel AVR, GSM and RF transceivers
- design, development and installation of telemetry systems for water distribution networks.

Research Intern Nov. 2011–Dec. 2011
Technical University of Dresden, Dresden, Germany
- Worked on **Matlab Simulink** Model Development for the project "dependence of rotor current in doubly-fed induction generator on different grid voltage faults and operation points."

Research Assistant Aug. 2013–Present
Wayne State University, Detroit, MI
- **Deep Neural Networks** in **Multimodal Retrieval Systems**,
- **Neural Networks** in **Textual Information Retrieval Systems**,
- **Sequential Detection** in **Concept Graphs**,
- **Optimization** Frameworks in **Information Retrieval** Systems,
- **Topic Modeling** in **Information Retrieval** Systems,
- **Knowledge-based** Query Expansion in **Clinical Decision Support** Systems (won three competitions in TREC-CDS'15),
- **Sequential Detection**, **Quickest Search** and **Change Point Detection** algorithms in **Cognitive Networks** and **Social Media**.

Instructor and Teacher Assistant Aug. 2013–Present
Wayne State University, Detroit, MI
• Senior Project (Capstone Course) and Computer Ethics • Information Retrieval Systems • Computer Science I and II • Operating Systems • Web Design • Introduction to C++.

AWARDS

- First-place and second place awards at Text REtrieval Conference (TREC) Clinical Decision Support (CDS) Track held by National Institute of Standards and Technology (NIST) (2015),
- Andrzej Olbrot Travel Award for **Excellence in Graduate Student Research** (2016),
- Thomas C. Rumble University Graduate **Fellowship** (2017),
- Arshia Sioshansi's Merit **Scholarship** Award (2017),
- **SIGIR Student Travel Grants** to attend CIKM'16 and ICTIR'16 (2016),
- Second-place award at the Task **B-Automatic** of TREC-CDS Track held by NIST (2015),
- Distinguished MSc thesis Award from Iran Telecommunication Research Center (Fall 2011).

PATENTS

- An Economically Efficient Telemetry System for Rural Water Networks (National Patent, No. & Application Date: 390060982–21/09/2011)

RECENT PUBLICATION

- "Deep Neural Architecture for Multi-Modal Retrieval based on Joint Embedding Space for Text and Images." in proceedings of **WSDM'18**.

SKILLS

Teaching (10+ years), Machine Learning (5+ years), Signal Processing (5 years), Deep Learning (3 years), Natural Language Processing (2 years), C++ (10+ years), Python (4 years), Java (3+ years), R (3+ years), Bash (4+ years), C (2 years), Julia (1 years), MATLAB (12+ years), JavaScript (2+ years), TensorFlow (2+ years), Torch (1+ years), NumPy (3+ years), scikit-learn (3+ years), SciPy (2+ years), Pandas (2+ years), ggplot (3+ years), PySpark (1 year), Hadoop (1 year), Indri (5+ years), Galago (1+ years), Apache Lucene (1+ years), Android (1+ years), Django (1+ years), MongoDB (1+ years), MySQL (1+ years), Bootstrap (1+ years), AWS (2+ years), Git (5+ years).